Association of State
Drinking Water Administrators

May 30, 2023

Honorable Radhika Fox
Assistant Administrator Radhika Fox
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460

Re: Proposed PFAS National Primary Drinking Water Regulation Rulemaking (EPA-HQ-OW-2022-0114)

Dear Assistant Administrator Fox,

The Association of State Drinking Water Administrators (ASDWA) appreciates the opportunity to comment on EPA's proposed PFAS National Primary Drinking Water Regulation. ASDWA is the professional association that serves the individuals (and their staff) who lead and implement the 57 state, territorial, and tribal drinking water programs (hereinafter "primacy agencies").

ASDWA would like to thank the Office of Ground Water and Drinking Water (OGWDW) for its continued engagement on this critical rulemaking. ASDWA supports EPA's proposed regulation as it provides national leadership and consistency for addressing PFAS in drinking water. In the absence of a National Primary Drinking Water Regulation (NPDWR), some primacy agencies have been struggling to appropriately use EPA's health advisory levels for perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), hexafluoropropylene oxide dimer acid (HFPO-DA) and its ammonium salt (also known as GenX chemicals), and perfluorobutane sulfonic acid (PFBS) or have moved ahead to set their own state-level standards.

As co-regulators with EPA, ASDWA has a unique role with the Agency on rule development and implementation. ASDWA collaborated with primacy agency staff across the country to develop these comments on PFAS treatment, monitoring, laboratory analysis, and communication. However, these comments do not necessarily represent the specific comments of individual primacy agencies, and ASDWA's comments also do not represent a consensus, as perspectives can diverge on specific issues. ASDWA encourages EPA to consider all individual primacy agency comments in addition to these comments.

The attached detailed comments address specific components of the proposed rule and highlight several critical feasibility issues that warrant a thoughtful response. ASDWA supports

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the proposed rule, with the caveat that the seven critical recommendations below warrant the Agency's consideration for inclusion in the final rule:

1. **ASDWA recommends that EPA prioritize the development of robust guidance, training, and implementation tools ahead of promulgating the final rule.** Timely and comprehensive guidance on rule implementation and simultaneous compliance, public notice templates, data management, and information on PFAS mitigation strategies and compliance timelines is necessary to ensure that primacy agencies and water systems can effectively implement the rule. ASDWA recommends that the Agency share these documents with primacy agencies in advance of the public release to allow for preparation for engagement with their water systems, the public, and the media.

2. **ASDWA recommends that EPA utilize findings from ASDWA's PFAS Cost of State Transactions Study (PCoSTS) to reevaluate the primacy agency costs portion of the preamble and economic analysis to better reflect the true state burden.** EPA's estimate for state staff time for rule adoption, treatment review and approval, mandatory reporting, and review of source water changes is inaccurate and underestimated. In particular, the Agency has unrealistic expectations for the considerable time that primacy agencies will spend providing technical assistance to water systems. Gaining an improved understanding of primacy agency costs will assist EPA to identify revisions to improve rule feasibility and reduce these costs.

3. **ASDWA recommends that EPA work directly with ASDWA and its members on risk communication materials for the PFAS NPDWR before the rule's final publication.** Materials from non-governmental organizations (NGOs) do not absolve EPA of its responsibility for developing robust risk communication resources. Resources from the Agency hold greater weight for the public and primacy agencies than from NGOs. Using EPA's materials ensures that everyone is communicating the same essential messages.

4. **ASDWA recommends that EPA address anticipated laboratory capacity issues ahead of the final NPDWR.** States continue to stress that the proposed rule will impact laboratory capacity. The number of laboratories that will be capable of sampling for PFAS in time to meet the new rule compliance demands is still uncertain. The number of samples that water systems will need to be analyzed will likely exceed laboratory capacity for all laboratories and each laboratory individually. ASDWA recommends that EPA further demonstrate the estimated sample demand and current national laboratory capacity to address this feasibility concern.

5. **ASDWA recommends that EPA clarify and allow maximum flexibility to use previously acquired state sampling data for determining initial monitoring and waivers.** States support the maximum flexibility for using existing state data to determine initial monitoring that was not included under the Fifth Unregulated Contaminant Monitoring

Rule (UCMR 5) and for allowing waivers utilizing both state and UCMR 5 data. Clarification in the final rule is necessary to provide the details of the requirements for using previous state sampling and the number of samples necessary to meet the initial monitoring requirements.

6. **ASDWA recommends that EPA change the trigger levels to one-half the MCLs for determining compliance monitoring frequency.** Setting the trigger levels at one-half (instead of one-third) of the MCLs would alleviate confusion regarding using the 1.3 parts per trillion for PFOA and PFOS, which some may incorrectly assume means laboratories can accurately test to that level. Setting the trigger levels for reduced monitoring at one-half (instead of one-third) of the MCLs would improve laboratory capacity and allow more states to use previously collected data for determining reduced monitoring.

7. **ASDWA suggests that EPA allow flexibility in the compliance deadlines to ensure feasibility, similar to the flexibility offered as a part of the final arsenic regulation, allowing extended compliance deadlines depending on the system size and initial concentration.** While systems with a population greater than 3,300 are currently sampling for PFAS under UCMR 5, only a small subset of small water systems are currently a part of that sampling pool. As many large and medium-sized water systems will be taking advantage of the opportunity to use previously collected data from UCMR 5, many small systems will take their first PFAS samples when the final PFAS NPDWR is implemented. If these small systems exceed the MCL, the three-year compliance timeline will be challenging.

Addressing these recommendations and our detailed comments will optimize implementation of this regulation and improve public health protection by reducing PFAS levels in drinking water. Addressing ASDWA's recommendations will help states effectively implement this rule and ensure that water systems have achievable paths to compliance. ASDWA recommends that EPA continue to engage the primacy agencies as the Agency works to finalize this rule. A coordinated effort will help ensure that public communication is effective and that primacy agencies are prepared to engage with their water systems as soon as the final rule is published. As partners with EPA, ASDWA is ready to coordinate meetings between the primacy agencies and EPA as needed to ensure the successful implementation of the NPDWR.

Implementing this rule will require considerable staff resources from primacy agencies already burdened by new priorities in addition to the typical Safe Drinking Water Act (SDWA) implementation programs. ASDWA's PCoSTS estimates that the primacy agency staff time required for the first year of rule implementation, which includes one-time activities such as regulatory start-up and review and approval of water system treatment plans, will be 1,039,750 hours. At the state and local hourly government employee rate of $57.60 based on the U.S.

Bureau of Labor Statistics, the first year of implementation will cost primacy agencies $59,889,624.

ASDWA's model also estimates the primacy agency staff time in subsequent years for annual implementation activities, such as reporting, compliance, and technical assistance. Following the first year of implementation, ASDWA estimates the proposed rule will require 325,850 hours of staff time at a cost of $18,768,960 annually. Combining the cost of the first year of implementation with four subsequent years of annual rule requirements (for a total of 2,343,150 staff hours), ASDWA's model estimates that the proposed NPDWR will increase primacy agency staff hours by roughly 469,000 hours annually in its first five years of implementation, translating to an annual cost of approximately $27 million.

These increases in primacy agency responsibilities should be supported by a corresponding increase in the Public Water System Supervision (PWSS) Grant Program, recognizing EPA's limited ability to influence Congressional PWSS appropriations. Without additional PWSS funding, primacy agencies will have to make tough decisions on prioritizing support to existing programs. Limitations on primacy agency resources will result in fewer opportunities to work individually with water systems to improve compliance and protect public health.

On behalf of ASDWA's 57 members, we thank EPA for the opportunity to provide insightful comments on this critical rulemaking. ASDWA looks forward to further engagement with the Agency as we work together to implement this rule. Please feel free to reach out to me if you have any questions about these comments.

Sincerely Yours

J. Alan Roberson, P.E.
ASDWA Executive Director

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Comments by the Association of State Drinking Water Administrators (ASDWA) for the Proposed PFAS National Primary Drinking Water Regulations Docket ID No. EPA-HQ-OW-2022-0114

Introduction

The Association of State Drinking Water Administrators (ASDWA) appreciates the opportunity to provide comments on the Environmental Protection Agency's (EPA) proposed PFAS National Primary Drinking Water Regulation (NPWDR). ASDWA is the professional association that serves the individuals (and their staff) who lead and implement the 57 state, territorial, and tribal drinking water programs (hereinafter "primacy agencies"). Formed in 1984 to address a growing need for drinking water administrators to have national representation, ASDWA is a respected voice for primacy agencies with Congress, EPA, and other professional organizations.

ASDWA supports EPA's proposed regulation which provides national leadership and consistency for assessing and addressing PFAS in drinking water. These comments focused on topics significantly impacting primacy agencies and where ASDWA's members could provide the most robust feedback. As co-regulators, these comments offer a unique perspective given ASDWA's members' collective experience implementing the Safe Drinking Water Act. The input provided in this letter will help ensure that the final rule is feasible and effectively implemented and, therefore, results in increased public health protection. It should be noted, however, that these comments do not necessarily represent the specific comments and concerns of individual primacy agencies. ASDWA's comments also do not represent a consensus from all members. We encourage EPA to consider all individual primacy agency comments, in addition to ASDWA's, to gain further perspective.

General Comments

ASDWA supports EPA's efforts to collectively address PFAS in a regulatory framework other than multiple individual maximum contaminant levels (MCLs).

Building upon previous comments, ASDWA generally agrees with EPA's decision to develop an NPDWR that addresses PFAS in groups rather than individual substances. Attempting to establish individual MCLs in the future for every PFAS that is shown to have detrimental health impacts would be time-consuming, cumbersome, and unrealistic for the long-term management of this class of chemicals. However, ASDWA's members could not reach a consensus on using EPA's proposed Hazard Index (HI) as the optimal regulatory framework.

ASDWA continues to recommend that EPA use all the Agency's regulatory and non-regulatory authorities to prevent PFAS from entering drinking water sources.

ASDWA continues to support EPA's work to holistically address PFAS under the Agency's PFAS Strategic Roadmap. The Agency's approaches to "get upstream of the problem" and "hold polluters accountable" are paramount to the long-term protection of both surface and ground water sources of drinking water.

EPA must expedite the Agency's work to address PFAS in wastewater and stormwater discharges, including the development of rulemakings for PFAS effluent limitation guidelines for the organic chemicals, plastics and synthetic fibers, and metal finishing and electroplating point source categories, as well as studying PFAS discharges from landfills, paper and textile mills, and electrical and electronic components. Additionally, the Agency should work to finalize Draft Method 1633 promptly for laboratories to analyze samples for surface water, ground water, and other media; and the national recommended ambient water quality criteria for PFAS. Primacy agencies need EPA's assistance and guidance in these areas. Some agencies want to require monitoring for pollutants in their surface waters, and others want to develop their water quality criteria. Additional Clean Water Act (CWA) regulatory and non-regulatory actions should continue simultaneously with the Agency's other efforts. PFAS will remain a problem for drinking water systems as long as all sources of PFAS contamination are not appropriately addressed and PFAS users are not held accountable.

ASDWA recommends that EPA use a holistic lifecycle approach that includes close coordination with other Federal agencies to administer all possible Federal statutory and regulatory authorities to address PFAS concerns.

Using a holistic approach to reduce or eliminate the use of PFAS and to prevent these compounds from entering the environment and drinking water sources throughout any part or all of the chemical's lifecycle - from manufacturing through processing, distribution, and disposal - is much more effective and less expensive than removing PFAS compounds once contamination has occurred. Protecting drinking water sources and preventing contamination is essential for sustaining safe drinking water supplies, protecting public health and the economy, and has substantial environmental benefits.

The PFAS NPDWR is a first step in addressing PFAS contamination; however, numerous other regulatory decisions are made based on drinking water standards (e.g., ground water standards, ground water remediation determinations, National Pollution Discharge Elimination System permits, and surface water standards). EPA must coordinate across all the Agency's offices and with other federal Agencies (i.e., the Department of Defense, the Food and Drug Administration, and Centers for Disease Control) to reduce PFAS contamination. This approach across all Federal agencies will ensure consistent messaging and implementation. ASDWA has consistently recommended that EPA use a holistic lifecycle approach that includes close

coordination with other Federal agencies to administer all possible Federal statutory and regulatory authorities to assess, address, and remove PFAS or prevent PFAS from entering the environment (and drinking water sources) from all contributing media. This includes considering impacts from disposal and incineration, particularly as EPA works to finalize its guidance on the destruction and disposal of PFAS and materials containing PFAS. Utilizing all regulatory authorities will help ensure that the responsibility and cost for removing PFAS are not passed on from one media to another. This also includes consistent messaging to regulators, regulated entities, and the public on PFAS.

Guidance and Training Needed

ASDWA recommends that EPA prioritize the development of robust guidance, training, and implementation tools as part of promulgating the final rule.

As the first newly regulated drinking water contaminant in over twenty years, primacy agencies and water systems must have timely, clear, and concise guidance from EPA on rule implementation. Guidance, training, and implementation tools should be developed with primacy agencies' input and released when the rule is finalized so that primacy agencies and water systems are prepared to effectively implement the rule upon the compliance date. ASDWA recommends that the Agency share these documents with primacy agencies in advance of the public release to allow them time to prepare to engage with their water systems, the public, and the media. Primacy agencies must be partners with EPA in developing guidance, training, and tools.

Guidance and training should include the following:

- Regulatory implementation guidance to ensure consistency across primacy agencies and EPA regions, including details on the waiver process, compliance determinations, data management and reporting requirements, the trigger level for reduced monitoring, and using previously collected data for monitoring determinations.
- Templates for public notice, including minimum required elements.
- Detailed information for water systems on the available PFAS mitigation strategies that consider scalability, including considerations for using an alternative water source, point-of-use (POU) and point-of-entry (POE) devices, and best available technology (BAT) installation.
- Updated guidance regarding residual waste handling and disposal, including Resource Conservation and Recovery Act (RCRA) requirements and POU devices that have reached the end of their useful life.
- Detailed information for primacy agencies to aid in reviewing PFAS mitigation strategies (i.e., installation of BAT, use of POU/POE devices, or switching to an

alternative source), including best practices for ensuring the long-term maintenance of each strategy. This information should include recommended sampling plans for each option to ensure efficacy.

- Best practices for pilot testing the available BATs, including examples of successful pilot test results. To the extent practical, baseline water quality should be considered to guide pilot testing and effective treatment.
- Protocols for testing the raw and finished water in water systems that are performing operational (process control) testing in-house to ensure their treatment is operating correctly. This guidance will help to maintain and ensure process control.
- Updated guidance on simultaneous compliance, especially considering chemical contaminants, lead, corrosion control, and disinfection byproducts.
- Information on the expected compliance timelines for mitigating a maximum contaminant level (MCL) exceedance.
- Funding roadmap targeted at small and disadvantaged communities, outlining options across state and federal programs to ensure systems are funded most effectively.

This list of needed guidance and training from EPA is extensive, and meeting these needs is essential and critical to support primacy agencies and water systems in meeting the rule requirements.

Primacy Agency Staff and Resource Burden

EPA Analysis of Primacy Agency Costs

ASDWA has developed a PFAS Cost of State Transactions Study (PCoSTS) as an independent analysis of the primacy agencies' burden to help inform EPA's economic analysis developed for the proposed PFAS drinking water regulation (Appendix A). ASDWA recommends that EPA utilize findings from ASDWA's analysis to reevaluate the primacy agency costs portion of the preamble and economic analysis to reflect the primacy agency burden accurately.

EPA's analysis of primacy agency costs does not accurately capture all the activities primacy agencies will undergo for PFAS implementation. Additionally, the Agency's analysis underestimates the number of hours for the primacy agency tasks. ASDWA recommends that EPA utilize ASDWA's PCoSTS model to reevaluate the primacy agency costs portion of the preamble to better reflect the true burden as detailed below.

ASDWA's PCoSTS model estimates the primacy agency staff time required for the first year of rule implementation, which includes one-time activities such as regulatory start-up and review and approval of water system treatment plans. ASDWA estimates that the first year of implementation for the proposed PFAS drinking water regulation will require 1,039,750 hours of primacy agency staff time. At the state and local hourly government employee rate of $57.60

based on the U.S. Bureau of Labor Statistics, this will cost primacy agencies $59,889,624. ASDWA's model also estimates the primacy agency staff time that will be required for subsequent years for annual regulatory activities, such as reporting, compliance, and technical assistance. Subsequent years following the first year of implementation will require 325,850 hours of staff time at a cost of $18,768,960 annually.

Combining the cost of the first year of implementation with four subsequent years of annual rule requirements (for a total of 2,343,150 staff hours), ASDWA's model estimates that the proposed NPDWR will increase primacy agency staff hours by roughly 469,000 hours annually in its first five years of implementation. This translates to an annual cost of approximately $27 million.

EPA underestimates the time for each primacy agency to read and understand the rule and adopt regulatory requirements. The time needed to adopt regulatory requirements will vary greatly across the country. Some primacy agencies have requirements for robust public comment periods as a component of new rule adoption. Additionally, primacy agencies may need to accredit laboratories for PFAS testing, which will increase the amount of staff resources needed for implementation. Primacy agency staff will also need to create or modify existing reports, such as the Consumer Confidence Report (CCR), Safe Drinking Water Information System updates, and monitoring schedule updates. Finally, this estimate does not consider the amount of time primacy agency staff will spend responding to questions from members of the public, inquiries from public officials, and media requests immediately following the final publication of the NPDWR. ASDWA estimates 210,700 hours for primacy agency staff working on the regulatory start-up of this proposal, with an associated cost of $12,136,320.

EPA's analysis assumes that the amount of time a primacy agency will need to review treatment plans directly correlates with the size of the water system, and this assumption is inaccurate. ASDWA's members have reported that small systems often take the most time as they need significant assistance to navigate the process for the design and construction of new treatment and get into compliance. Primacy agencies often work with these communities to locate consultants for preliminary engineering reports (PERs), develop construction plans and specifications, help obtain funding, and manage construction. Additionally, this assistance often goes beyond just the construction of the treatment and start-up as systems work to remain compliant. Assistance with operation and maintenance (O&M) is often required. ASDWA's model estimates 503,200 hours costing $28,984,344 for treatment review and approval, with the vast majority of hours and dollars used addressing small systems.

EPA's assumption that the mandatory reporting regarding violations, variances and exemptions, enforcement actions, and general operations of primacy agency programs will not incur any additional primacy agency staff time is inaccurate. The proposal is a new regulation that will impact several thousand systems and likely result in hundreds of violations once the rule goes

into effect. Each of those violations and the actions needed to return these systems to compliance will take additional time and effort. Additionally, primacy agencies anticipate that their staff will have to spend significant time working with water systems to develop and maintain monitoring schedules, particularly because the level needed for reduced monitoring is below the PQL. Although EPA plans to provide a public tool for systems to determine their Hazard Index, ASDWA's members anticipate many of these systems will still go to their primacy agencies for assistance. ASDWA estimates 245,000 staff hours will be dedicated to compliance at a cost of $14,112,000.

EPA's estimate for the primacy agencies to review source water changes, four hours, is inaccurate. Changing sources has treatment design considerations and typically have significant implications on finished water quality, such as corrosion control, disinfection by-products, disinfectant residual, etc., that must be carefully considered. This analysis of the potential for unintended consequences from source changes will take significantly longer than four hours.

EPA's estimates do not appropriately consider the primacy agency staff time needed to implement pilot testing for new treatment. Staff review time will be needed for both the design of the pilot as well as all the pilot testing data, ranging from a desktop analysis to bench-scale testing to a full pilot plant. This staff time should be appropriately captured in EPA's final estimates.

ASDWA's PCoSTS model details the increased staff resources for rule implementation. State drinking water programs are already hard-pressed financially. Ongoing regulatory oversight to ensure compliance is constant, and several proactive actions such as addressing cyanotoxins and providing oversight for the development of lead service line inventories, have increased states' workloads. States consistently step in to help solve problems and return systems to compliance as quickly as possible.

State-provided funding has historically compensated for inadequate federal funding, but state budgets have been variable for the past few years, given the COVID-19 pandemic and other economic issues. These increases in primacy agency responsibilities should be met with a corresponding increase in the Public Water System Supervision (PWSS) Grant Program, recognizing EPA's limited ability to influence Congressional PWSS appropriations. Without the additional PWSS funding, primacy agencies will have to make tough decisions on prioritizing support to existing programs. Limitations on primacy agency resources result in fewer opportunities to work individually with water systems to improve compliance and protect public health. Insufficient federal support for the PWSS program increases the likelihood of scenarios that put the public's health at risk.

ASDWA recommends EPA split "technical assistance" into multiple components.

EPA's estimates and assumptions regarding the amount of technical assistance that will be needed for systems to come into compliance are underestimated. As previously discussed, small systems will need extensive assistance, but even medium and large systems will need support. Some primacy agencies have reported regularly getting in-person training requests from all sizes of water systems. These requests result in primacy agency staff driving across the state to conduct training for the system's employees. Primacy agencies have received feedback from operators that they prefer in-person training and find them more effective than online training for complex issues. The complexities of the PFAS regulation will drive the development and delivery of a significant amount of in-person training. This work involves time to develop the workshop materials and significant travel time depending on the system's location. With concerns over contaminating a sample during collection and using a new Hazard Index approach, primacy agencies anticipate receiving a significant number of in-person training requests.

To get a more accurate estimate of the primacy agency burden for technical assistance, ASDWA recommends that EPA split "technical assistance" into multiple components. Currently, the economic analysis is unclear on exactly what the Agency is considering under the category of "technical assistance." EPA's estimate is low by a significant amount if all technical assistance activities are considered. ASDWA recommends that EPA break down its analysis into the components below.

- Assistance to obtain valid water samples.
- Assistance to systems to locate consultants to develop Preliminary Engineering Reports (PERs).
- Assistance to systems to identify and evaluate options for potential new water sources.
- Assistance to systems to identify funding.
- Assistance to systems during the piloting process and determining the appropriate treatment.
- Assistance to systems in developing construction plans and specifications.
- Development and presentation of new training modules for systems.

ASDWA recommends that EPA include a separate category for compliance activities, as these activities will take up a substantial portion of staff time.

Some primacy agencies have reported that staff will need to devote additional time to sampling training, sanitary surveys, evaluating compliance data, updating inspections standard operating procedures, and verifying treatment. PFAS sampling involves special care to avoid unintentional contamination and, therefore, will require more training.

Primacy agencies in states already regulating PFAS have noted that some systems, particularly small or disadvantaged ones, choose to be continually out of compliance due to laboratory testing and treatment costs. This decision requires primacy agencies to continually do outreach to these communities.

The reduced monitoring schedules and determinations will take significant time due to how often water systems will be triggered back into standard monitoring. Tracking compliance monitoring schedules for systems that go back and forth between standard and reducing monitoring will take significant staff time.

ASDWA recommends that EPA include the costs associated with primacy agencies that conduct compliance sampling for their water systems within the Agency's economic analysis.

EPA's economic analysis appears to exclude the costs that will be borne by primacy agencies that conduct compliance sampling for their water systems. This subset of ASDWA's members will be significantly impacted by this increase in required sampling, both financially and with their staffing needs. ASDWA's members have reported that the initial monitoring requirements within the proposed NPDWR will cost the affected primacy agencies between $900,000 and $2.33 million. These figures exclude any purchasing systems. One primacy agency estimated that routine monitoring would cost the agency roughly $450,000 per year. Finally, one primacy agency noted that due to the precautions necessary for PFAS sampling, the agency does not intend to take these samples alongside their standard sampling collection. Therefore, the primacy agency expects five additional FTEs will be required to meet the compliance sampling demand.

Primacy Agency Workforce and Workload

ASDWA recommends that EPA further acknowledge and support primacy agency efforts to address workforce issues to ensure continued public health protection.

Primacy agencies face increasing workloads with implementing existing rules and regulatory programs and starting new regulatory and non-regulatory efforts. Primacy agencies are assisting water systems with implementing the Lead and Copper Rule Revisions (LCRR) requirements for initial service line inventories and addressing cybersecurity. Additionally, primacy agencies are managing a significant increase in applications for Bipartisan Infrastructure Law (BIL) funding through the Drinking Water State Revolving Fund (DWSRF) programs. Primacy agencies are facing unique workforce issues in that the retirements of "Baby Boomers" are coinciding with the increased workload previously described. Hiring staff, especially engineers, is currently very difficult for primacy agencies. ASDWA recommends that EPA ensure that the Agency's water sector workforce initiative includes considerations for primacy agency staff.

Data Management

ASDWA recommends EPA ensure DW-SFTIES is capable of fully managing the data of the proposed rule.

The importance of data management in effectively implementing any rule cannot be understated. The Safe Drinking Water Information System (SDWIS) is used by most primacy agencies for compliance determinations and reporting, storing public water system facility data, tracking monitoring schedules, and keeping the public informed of the quality of their drinking water. Several primacy agencies do not use SDWIS and instead have developed custom data systems in use by their program - known as "SDWIS Free." Currently, SDWIS cannot effectively manage PFAS data, so most primacy agencies engaged with early data tracking and collection for PFAS do so outside of that data system. Many primacy agencies will need to migrate this data into SDWIS, which presents several challenges. SDWIS is undergoing a modernization effort that will span the next few years. Once the modernized system is released, known as Drinking Water State Federal and Tribal Information Exchange System or DW-SFTIES, additional time will be needed before state primacy agencies put it in production. Given these timelines, primacy agencies will need to manage PFAS-related data across multiple systems. Eventually, primacy agencies will need to migrate PFAS data into DW-SFTIES, which is presumed to fully support the data management of the proposed rule. These essential primacy agency functions increase the cost of rule implementation.

ASDWA recommends EPA develop a mechanism for migrating UCMR data into SDWIS State to reduce or eliminate the burden imposed on primacy agencies who would otherwise need to perform this work manually.

Managing PFAS data across multiple systems further challenges water systems that request reduced monitoring and have submitted UCMR 5 data to EPA through the Safe Drinking Water Accession and Review System (SDWARS). No automated process exists to migrate these data into SDWIS, and this gap is significant. Additionally, some missing data elements (Laboratory IDs, Minimum Reporting Levels, etc.) and the inability to download quality control data, which must be viewed in SDWARS one analyte at a time, may complicate developing a simple solution. Still, as the requirements for reduced monitoring depend on these data, resolving the data migration issue is a priority concern.

ASDWA recommends that EPA provide Data Entry Instructions (DEIs) within six months of the promulgation of the rule to allow primacy agencies, particularly "SDWIS Free" programs, to prepare their systems.

All primacy agencies will need time to prepare their existing data systems to meet the new requirements. To ensure data systems are prepared to manage the data required and ensure timely reporting to EPA, access to the Data Entry Instructions (DEIs) is critical. This need is especially great for “SDWIS Free” programs which require additional lead times to update their

custom data systems and rely on the DEIs to ensure the reporting and recordkeeping requirements are met.

ASDWA recommends that EPA better coordinate between its regions and headquarters to ensure the Agency is not creating any unnecessary burden on the primacy agencies.

Primacy agencies have reported frustrations with requests from EPA headquarters and regional staff for duplicative data beyond what is required. As co-regulators, primacy agencies want to work with EPA and be helpful, but these additional data collection and reporting efforts take significant staff time and increase implementation costs. ASDWA recommends that EPA improve coordination between its regions and headquarters to ensure the Agency is not creating any unnecessary burden on primacy agencies.

In summary, primacy agencies have a long list of resource feasibility concerns that need to be addressed for effective rule implementation. ASDWA recommends that EPA partner closely with primacy agencies and dedicate the needed Agency resources to address these important concerns in the final rule.

Public Communication

Risk Communication

ASDWA recommends that EPA work directly with ASDWA and its members on the risk communication materials for the PFAS NPDWR. ASDWA recommends that EPA work with the primacy agencies ahead of the final rule publication to identify communication gaps that need to be addressed before the rule is final.

A substantial number of helpful risk communication resources, such as the Water Research Foundation's toolkit, have been developed and released over the past few years. These materials should not be seen as absolving EPA of its responsibility for developing its own risk communication resources for broad use across the water sector. The media and public's interest in PFAS has increased substantially over the past few years, with the term "forever chemicals" becoming commonplace in the press. The widespread use of this term creates risk communication challenges for the water sector. Resources with the gravitas of the Agency behind them hold greater weight to both the public and the primacy agencies in delivering the challenging risk communication messages surrounding PFAS. Using EPA's materials ensures that everyone is communicating the same essential messages.

ASDWA appreciates EPA's willingness to work with the primacy agencies on risk communication after the Agency's health advisories were released in 2022. ASDWA recommends that EPA continue to ask the primacy agencies for feedback on the materials released by the Agency to identify areas that require clarification or improvement. These opportunities allow ASDWA to

engage with primacy agency staff with expertise in public communication and "bridge the gap" for public information sharing to substantially improve these materials. ASDWA recommends that EPA work directly with ASDWA and its members again on the risk communication materials for the PFAS NPDWR. ASDWA recommends that EPA work with the primacy agencies ahead of the publication of the final rule to identify communication gaps that need to be addressed before the rule is final. ASDWA recognizes that some materials will not be able to be publicly distributed ahead of time, but state staff can provide valuable insights into EPA's work.

To assist with the development of the risk communication materials, ASDWA's members have identified multiple focus areas for EPA's materials:

- Explain the differences, in plain language, between the health advisories, maximum contaminant level goal (MCLG), and Maximum Contaminant Level (MCL) and what they mean from the perspectives of human health and feasibility.
- Characterize the impact of drinking water versus all other exposure routes.
- Explain the differences between PQL, method detection limit (MDL), minimum reporting level (MRL), etc., and ensure this is consistent throughout EPA's materials, the rule language, and the preamble.
- Provide language for water systems to use when the results of PFAS testing are above detection and the health advisory but below the PQL.
- Further explain the logic behind the levels EPA has chosen for determining reduced monitoring. These levels are above the health advisories and will be a public communication challenge.
- Provide further information on the Hazard Index and how it relates to the MCLs.

Hazard Index

From a communication perspective, ASDWA recommends that EPA retain the Hazard Index instead of establishing four additional MCLs.

EPA asked for comment on the decision to use solely a Hazard Index for the four PFAS mixture rather than a combination of a Hazard Index and MCLs. While ASDWA's members could not reach a consensus on the overall use of the Hazard Index, regarding the implications for public communication, ASDWA recommends that EPA only use the Hazard Index and not implement individual MCLs for the PFAS mixture compounds. ASDWA's members agree with EPA's reasoning that including a Hazard Index and four additional MCLs would create confusion without any obvious benefit.

Public Notice

ASDWA recommends EPA clarify the health effects language proposed to be included in the public notification requirements.

ASDWA's members support EPA's decision to utilize Tier 2 public notification (PN) for the PFAS NPDWR, as this approach is consistent with other chemical MCLs with chronic effects. However, the proposed health effects language to be included is confusing and needs additional clarification. As is currently written, EPA seems to have included both acute and chronic, or at least sub-chronic, effects in the PN language. Additionally, this PN language is inconsistent with the language the Agency used for the previous health advisories. The PN language discusses PFAS levels above the MCL being of concern, while the health advisory language discusses health impacts at much lower levels. This will create additional confusion with the public regarding the safety of their water. Finally, the language within the rule also loses the focus on sensitive sub-populations and only refers to "children." ASDWA recommends that the Agency change this to include "pregnant individuals and infants."

Laboratory Capacity

ASDWA recommends EPA stagger the initial monitoring requirements based on system size to help address anticipated laboratory capacity issues.

Despite EPA's assurance that laboratory capacity will not be a problem, laboratory capacity will clearly be impacted by several factors:

- Water systems will continue to test under the Fifth Unregulated Contaminant Monitoring Rule in 2024 and 2025;
- The time it takes to get a laboratory certified for PFAS methods;
- The number of laboratories that are currently capable of analyzing for PFAS and being able to manage the volume of samples;
- The method requirements for temperature and timeframes for laboratories to store and analyze the samples;
- Shipping delays; and
- The competing demands for laboratories to analyze PFAS in other environmental media, while at the same time meeting other new and existing drinking water regulatory needs.

The additional time for more laboratories to get certified and prepare to analyze PFAS samples for the rule will impact laboratory capacity. Laboratories will need to purchase new equipment

and instruments, set up, test, and validate the equipment, and hire new staff as part of this process. These needs will also impact the ability to get additional state laboratories certified and ready to analyze for PFAS because of inadequate funding. Laboratory capacity for analyzing PFAS in drinking water using EPA Methods 533 and 537.1 will also be impacted by laboratories concurrently getting ready to use EPA Method 1633 for analyzing PFAS in surface water, fish tissue, biosolids, and soils.

The number of laboratories that will be capable of analyzing for PFAS in time to meet the new rule compliance demands is still uncertain. The volume and number of samples that water systems will need to be analyzed based on expected occurrence and sampling frequency will likely exceed laboratory capacity for all laboratories and each laboratory individually. Laboratory capacity is a significant feasibility concern that should be further analyzed. Some primacy agencies have noted impacts on their laboratory capacity due to limited suppliers for PFAS standard reagents. Primacy agencies have also reported that laboratories have had to modify sample bottle lids to fit their auto extractors, where the standard bottles and lids are incompatible.

Analytical method requirements for temperature and timeframes to store and analyze PFAS samples may also require laboratories to significantly increase refrigeration storage. Primacy agencies have reported that some laboratories are currently unable to keep up with the volume of PFAS samples being run for UCMR 5 and other monitoring being conducted by primacy agencies. The increased volume is creating delays in storing and processing samples while meeting the method requirements.

Additionally, some primacy agencies have found that systems are having problems meeting temperature and timeframe method requirements when shipping samples. Delays in shipping have caused water systems to take additional samples due to the inability to keep samples at temperature and ship them to the laboratory for processing in time to meet the method requirements.

Laboratories have competing demands to analyze PFAS in other environmental media and, at the same time, meet other new and existing drinking water regulatory needs. PFAS detections in drinking water cause primacy agencies to launch investigations to find the source of the PFAS and other potential impacts, which typically include conducting sampling for surface water and soils and nearby private wells. The LCRR and the future Lead and Copper Rule Improvements will likely create additional demands on laboratories, particularly if a significant number of systems will need to re-start initial monitoring based on revised compliance sampling locations.

These revisions would significantly increase the number of lead and copper compliance samples.

Some primacy agencies have noted that the variation in sampling results at or near the PQL means that 25% or more of laboratories cannot meet below 4.0 ppt with a 95% confidence interval. This issue must be addressed before the final rule if EPA intends to maintain the proposed MCL of 4.0 ppt. Additionally, ASDWA's members have reported that some do not have state laboratories that can analyze PFAS samples, and even those with the capability do not necessarily analyze samples from water systems. Finally, since not all laboratories can provide results below 4.0 ppt, ASDWA's members anticipate a large influx of requests to those laboratories that can obtain results a lot lower than 4.0 ppt in order for systems to qualify for reduced monitoring. This will further strain laboratory capacity.

To address these laboratory capacity concerns, ASDWA recommends that EPA include language within the final rule requiring initial monitoring to be staggered based on system size. Systems serving less than 3300 people should monitor last, as the majority of these systems will not have conducted UCMR 5 monitoring and will likely need the most time to budget for costs and meet monitoring requirements.

ASDWA recommends that EPA exempt water systems that purchase their water from other public water systems from monitoring requirements within the NPDWR.

The final rule should clarify and explain its reasoning on whether systems that purchase their drinking water from other public water systems will be required to monitor under the NPDWR. The Agency's proposed language uses the terms "ground water" and "surface water" when referring to both community water systems and non-transient non-community water systems, but terms are undefined. The Agency's definitions lack clarity regarding the inclusion of purchasing systems (or not). ASDWA recommends that EPA include an exemption from the monitoring requirements for purchasing systems in the final rule, which would be consistent with existing exemptions for other chemical contaminants. Levels in the purchasing system would be controlled by the producing system, and there should not be an instance where the purchasing system would exceed the MCL if the producing system does not. Requiring purchasing systems to test for PFAS would be a waste of water system resources and exacerbate existing laboratory capacity issues.

ASDWA recommends EPA address laboratory training and expanding capacity needs to ensure costs are considered as a part of the economic analysis in the final regulation.

The amount and variety of costs and resources needed to set up and certify laboratories and access supplies, to have laboratories analyze the water system PFAS samples, and to ensure accurate reporting for regulatory compliance will impact laboratories, primacy agencies, and water systems. ASDWA estimates a cost of $1 million to set up a laboratory, obtain certification, and prepare to analyze drinking water samples for PFAS using EPA Methods 537.1 and 533. This estimate includes the costs for PFAS-clean rooms, equipment, nitrogen, consumables, service agreements, staff, and more. In addition, laboratory infrastructure changes may be needed, such as plumbing nitrogen lines, running new electrical circuits, and ensuring adequate ventilation for new instruments. PFAS will be the first SDWA-regulated compounds to be analyzed using tandem mass spectrometers (LC/MS/MS) or triple quadrupole mass spectrometers (triple quads) that are very costly (from $400,000 -$700,000) and more difficult for laboratory staff to use.

Laboratories will incur additional costs and need training and resources to prepare for reporting sample results electronically to the state's data reporting system (e.g., SDWIS). Primacy agencies will also incur additional costs to develop templates, guidance, and SOPs for laboratory staff to ensure that water system violations are accurately calculated using the running annual average (RAA) for the new PFAS MCLs.

The water system costs for laboratories to analyze PFAS are expensive and increase significantly when laboratories run the field reagent blanks (FRBs). Laboratory costs for analyzing PFAS using EPA Method 533 are also more expensive than costs for analyzing PFAS using EPA Method 537.1.

ASDWA recommends that EPA revise the use of significant figures to ensure accuracy and consistency throughout the proposed rule.

The proposed rule uses inconsistent significant figures for the proposed MCLs. For example, the footnote in the table at 141.50(b) states correctly that the HBWC for HFPO-DA is 10.0 ppt, but the formula used for the Hazard Index in that same footnote uses 10. This inconsistency continues for PFBS and PFNA. EPA should ensure that all references to the MCLs use the correct number of significant figures. ASDWA's members have also noted this issue in EPA's presentations and fact sheets. EPA should ensure that all materials the Agency releases use the correct number of significant figures.

Monitoring Requirements

ASDWA recommends using the standard monitoring framework (SMF) for Synthetic Organic Chemicals (SOCs) to provide consistency and clarification for PFAS monitoring requirements.

Using the SMF for quarterly monitoring and allowing water systems to stagger monitoring would provide clarification and consistency for PFAS monitoring requirements. The specification of the 90-day monitoring requirements, rather than requiring typical quarterly sampling per the SMF, is confusing. This confusion is exacerbated when, for example, the water system is seasonally operated and must retake a sample due to the sample being invalidated (but that was taken in the correct timeframe). This component of the rule needs more details and clarification. This every 90-day requirement was included in the Stage 2 Disinfectants and Disinfection Byproducts Rule (DBPR), and some primacy agencies noted that their water systems were unable to meet the specific timing requirements. Based on EPA guidance, many primacy agencies allowed the samples to be taken within three calendar months. Some existing state PFAS drinking water regulations specify that the timeframe for compliance monitoring is restarted in the event that a sample is invalidated. In addition, the language in the proposed rule regarding staggered monitoring is vague and, as currently written, may not be evenly staggered. The language, as written, appears to allow water systems to test anytime within the three-year window, and all water systems could wait until the end of the monitoring period to conduct sampling. This timing could further stress laboratory capacity.

ASDWA does not recommend allowing solely vulnerability assessments for monitoring waivers during the initial monitoring period and does not recommend using composite samples.

The final rule should not allow monitoring waivers solely based on vulnerability assessments during the rule's initial monitoring period. States that have conducted monitoring have found PFAS in drinking water sources that were not expected due to the location and proximity to potential sources of PFAS. Knowledge is lacking on PFAS occurrence and transport, and insufficient data is available to make these determinations. New sources of PFAS contamination are being found on a consistent basis across the country. Vulnerability assessments may be appropriate in the future as water systems obtain more data. In addition, ASDWA agrees with EPA's proposed deviation from the SMF for SOCs to not allow samples to be composited based on the low concentrations of PFAS that must be analyzed from different entry points.

ASDWA recommends that EPA allows water systems to have different monitoring schedules for different entry points.

ASDWA recommends that EPA not require that all entry points be monitored on the same monitoring frequency. This flexibility in the final rule would allow systems to reduce analytical costs and would align with the current approach for chemical monitoring, especially for systems that have several sources.

ASDWA recommends that EPA clarify and allow maximum flexibility to use previously acquired state sampling data for determining initial monitoring and allowing waivers.

ASDWA recommends that maximum flexibility be allowed for using existing state data that was not included to meet the initial monitoring requirements and for allowing waivers using both state and UCMR 5 data. This flexibility should include providing primacy agencies with the ability to refrain from allowing water systems to use UCMR 5 data in lieu of initial monitoring. Clarification is needed in the final rule on the requirements for using previous state sampling and the number of samples needed to meet the requirements for initial monitoring with the necessary stipulations for PFAS detections. Additionally, the final rule should explicitly state that water systems that conduct UCMR 5 monitoring do not need to conduct initial monitoring. While the UCMR 5 only requires large ground water systems to sample twice, this should be sufficient, even though the proposed rule requires quarterly sampling.

The final rule should answer the following questions in a way that allows the maximum flexibility for primacy agencies to make determinations about using existing data, to know what additional data the state may want to acquire before the rule goes into effect, and preemptively fill the gaps by taking additional samples to meet rule requirements for existing data, and for data reporting.

- Would one sampling event with no detections (done for statewide sampling using EPA Method 533) be allowed for initial monitoring? Or does the state data for water system samples have to be from four consecutive quarters?
- Will state data count if the primacy agency used a modified method when the only part that was modified was not running a field reagent blank, and instead, the laboratory did confirmation samples?
- How do varying reporting limits among the different primacy agencies affect this decision?
- Will it be up to the primacy agency to decide whether existing water system sampling data can be used for waiver requirements and reduced monitoring?

- How will primacy agencies verify and share the sampling data when it has not been entered into SDWIS?
- Will the CCR create SDWIS reporting for PFAS?

ASDWA recommends that the rule specify the date(s) by which initial monitoring must be completed.

The date specified in 141.XX(b)(1)(vi) only applies to monitoring that is needed to supplement previously acquired data to meet the initial monitoring requirements.

ASDWA recommends that EPA provide additional clarification to define the types of ground water systems for which the less frequent (1 sample every six months) initial sampling requirements apply.

The final rule should clarify and explain its reasoning on whether springs and ground water systems under the direct influence of surface water (GWUDI) can qualify for less frequent initial monitoring. The rule should also provide examples of ground water systems that would not be eligible for less frequent monitoring, such as water systems that mostly purchase surface water to provide drinking water to their customers but also have their own ground water wells.

ASDWA recommends that EPA clarify and revise conflicting language about the capability and expectation of laboratories to report PFAS detections at the lowest levels for reduced monitoring and compliance.

ASDWA's members could not reach a consensus on supporting the methods EPA has used to calculate the running annual average for determining both compliance and reduced monitoring. The PQL is defined as the "lowest concentration of an analyte that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions." Clarification is needed to explain how sample results with detections below the PQLs can or cannot be used for both reduced monitoring and compliance.

Some primacy agencies have highlighted that allowing the use of samples with PFAS detection levels lower than the PQL "for purposes of screening and to determine compliance monitoring frequency" conflicts with the definition and use of the PQL. The use of this language creates an expectation that laboratories can accurately report detection levels of 1.3 ppt. Primacy agencies have reported that some laboratories can reliably detect PFOA and PFOS as low as 1.8 ppt, but they cannot accurately detect them at 1.3 ppt. This information further supports setting the trigger levels for reduced monitoring at one-half (instead of one-third) of the MCLs.

Based on the rule proposal, it appears that the 1.3 ppt for PFOA and PFOS is meant to be used only for determining reduced monitoring, and that EPA is not expecting laboratories to be able to test to these low levels. If this is true, the rule should be clearer. Additionally, the current understanding is that any data below the PQL of 4.0 ppt will be used solely for calculating the running annual average for reduced monitoring and that anything deemed "non-detect" will count as "zero" for this calculation. Again, the proposed rule as written is unclear on this important issue, and it is unclear whether EPA is expecting a laboratory to be able to detect PFOA and PFOS at 1.3 ppt for that data to be eligible for reduced monitoring. ASDWA recommends that EPA include an example of this calculation within the rule and supporting materials to reduce confusion.

Example of a running annual average calculation for initial monitoring to determine whether a system will qualify for reduced monitoring:

Quarter 1 Sampling – Non-Detect (0)
Quarter 2 Sampling - (2.2 ppt)
Quarter 3 Sampling – Non-Detect (0)
Quarter 4 Sampling – Non-Detect (0)
Running Annual Average: 0.55 ppt

Even when laboratories can test below the PQL, some primacy agencies have experienced significant issues with laboratory quality assurance and control for these results and question the legality of changing the monitoring frequency on levels below what laboratories can reliably and consistently report. In addition, some states with existing PFAS drinking water regulations only allow reduced monitoring for water systems that have samples with non-detects.

ASDWA's members could not reach a consensus on using either j-flag qualified or non-qualified data below the PQL of 4.0 ppt for compliance, noting some primacy agencies could not use j-flag data, some want to use j-flag results below the 4.0 ppt PQL, and other primacy agencies reported some labs have the ability to report results around a 2.0 ppt MRL without the use of a j-flag. Some primacy agencies have highlighted that having the PQL set at 4.0 ppt for PFOA and PFOS in the proposed rule creates a protocol for laboratories to report any sample results with lower-level detections and non-detects as zeros. ASDWA recommends that EPA provide additional clarification regarding the Agency's expectations as to how laboratories will report levels below the PQL. Some of ASDWA's members have noted that primacy agencies may want the numerical results of these sampling events regardless of being below 4.0 ppt. Additionally, if EPA has lifetime health advisories for levels less than the PQL, the public will demand to see any data a system has below the PQL. Finally, primacy agencies have highlighted variations and

inconsistencies in how laboratories report and primacy agencies accept (or do not accept) j-flag qualified data.

Some primacy agencies have asserted that using zeros for samples below 4.0 ppt does not calculate the RAA appropriately if the quarterly samples below 4.0 ppt have non-qualified detections just under 4.0 ppt (e.g., 3.9 ppt). These primacy agencies have noted that if a system's quarterly samples include non-qualified data below 4.0 ppt, that would result in a system being over the 4.0 MCL if included in the running annual average (rather than included as a "zero"), the system is not "reliably and consistently below the MCL" and should not be considered in compliance determinations based on the data reported to the primary agency.

Additionally, these primacy agencies noted that public communication surrounding the use of zeros for compliance calculations when there is a validated number from the laboratories will be challenging for primacy agencies and water systems. These primacy agencies are particularly concerned with public communication when levels below 4.0 ppt may equate to a violation of the RAA when using zeros would not, as noted above.

Other primacy agencies have asserted that the rule should not allow either j-flag qualified data or non-qualified data below 4.0 ppt to be used in making compliance determinations, and these sample results should remain as "zero" within the calculations. These primacy agencies argued that if EPA can verify that most laboratories can reliably detect lower than 4.0 ppt, then EPA should lower the PQL within the regulation rather than using data below the PQL for compliance calculations. In this case, anything below 2.0 ppt would count as "zero" in a compliance determination. Some ASDWA members have highlighted that they have laboratories capable of reliably and accurately reporting down to 1.8 ppt.

Additionally, the reporting and recordkeeping requirements for compliance within the rule should provide an option for not requiring the RAA to be reported by the laboratories if the primacy agency performs the RAA calculations for the water system. Finally, a table appears to be missing from the proposed rule where it is referenced in 141.901(b)(2)(i) and says that "certified laboratories (that)must report "quantitative data for concentrations at least as low as the ones listed in the following table…"

ASDWA recommends that EPA change the trigger levels to one-half the MCLs for determining compliance monitoring frequency.

The proposed rule is not clear regarding whether EPA expects that some laboratories will be able to reliably test as low as 1.3 ppt. Setting the trigger levels at one-half (instead of one-third)

of the MCLs will help alleviate this misconception. Additionally, increasing the trigger level will allow more states to use previously collected data for determining systems that qualify for reduced monitoring and help with laboratory capacity, as well as the previously stated challenges with laboratory QA/QC for sample results at 1.3 ppt for PFOA and PFOS and 0.33 for HI PFAS - perfluorohexane sulfonic acid (PFHxS), hexafluoropropylene oxide dimer acid (HFPO-DA) and its ammonium salt, perfluorononanoic acid (PFNA), and perfluorobutane sulfonic acid (PFBS). For the proposed MCL of 4.0 ppt, this would change the trigger level to 2.0 ppt for PFOA and PFOS and 0.5 of the MCL for the Hazard Index (HI).

PFAS Treatment

Treatment Concerns

ASDWA recommends that EPA include guidance for extended compliance deadlines based on system size and level of contamination.

Complying with a drinking water regulation at a low MCL that is essentially equivalent to the laboratory detection limit, as would be the case for complying with the proposed PFAS MCLs, requires robust and reliable treatment technologies (more than one). ASDWA supports EPA's analysis that an MCL of 4.0 parts per trillion is generally technically feasible as defined by the SDWA. However, several factors compound the implementation and feasibility challenges associated with achieving and maintaining compliance with the MCL. The combination of factors will vary between water systems, and compliance with the MCL will be a challenge for many systems, especially those that are small and disadvantaged. These compounding factors include:

- Resource concerns, including supply chain issues, workforce shortages, and costs;
- Sampling challenges, including delays in receiving results, limited lab capacity, and costs;
- Small system technical, managerial, and financial (TMF) capacity;
- Treatment efficacy, including daily operation needs for advanced treatment and operator capability;
- Waste disposal methods and the potential demand and supply of available waste disposal means;
- Timelines for compliance, treatment piloting, review and approval, and installation; and
- Impacts on available certified operators where addition of treatment raises the level of the certified operator required at a water system.

ASDWA supports EPA's proposal to allow exemptions to compliance deadlines under certain circumstances. ASDWA recommends that EPA consider the above factors to appropriately evaluate extended initial compliance deadlines for water systems, similar to the flexibility for the compliance deadlines in the final arsenic regulation. Appendix B of this letter is an excerpt from Appendix G on exemptions within EPA's State Implementation Guidance for the Arsenic Rule. ASDWA recommends that EPA utilize a similar protocol to Table 1 (G-15), where the compliance timelines are based on population and contaminant concentration. This guidance will help ensure primacy agencies can efficiently provide exemptions when appropriate.

Additionally, ASDWA requests that EPA continue its research into PFAS treatment, such as the planned PFAS demonstration projects by the Agency's Office of Research and Development (ORD), waste disposal technologies, additional investment into the capacity development program, and enhanced investment into the primacy agencies' programs which will oversee and implement this regulation. Primacy agencies and systems will also need in-depth guidance and training on PFAS mitigation techniques before the final rule's compliance date.

Treatment Efficacy

ASDWA recommends that EPA develop guidance and in-depth training for primacy agencies and water systems on PFAS treatment technologies, including guidance that addresses simultaneous compliance concerns. ASDWA strongly recommends that EPA invest funding into evaluations of the PFAS treatment technologies (especially for small systems) to support primacy agencies.

As outlined in the rule proposal, each of the BAT, in most cases, has the technical capability of removing the target PFAS to below the detection limit for PFAS; however, some primacy agencies have limited experience with some of the BAT, and other agencies have not approved the use of some of the BAT for PFAS or other contaminants. In-depth training will help ensure primacy agencies are comfortable approving these technologies for the removal of PFAS at their water systems. Additionally, because each of the available treatment technologies may require a pilot test to ensure treatment efficacy, ASDWA recommends that EPA develop specific guidance on what should be required and the ideal timeline for a pilot for each of the technologies at differently sized systems. This guidance should also include BAT design criteria recommendations and best practices (e.g., redundant treatment vessels, intermediate sample taps, etc.). ASDWA strongly recommends that EPA invest funding into evaluations of these technologies by ORD, similar to the arsenic studies completed in the early 2000s or EPA's previously managed Environmental Technology Verification (ETV) program. Investment should particularly focus on treatment technologies at small water systems.

Primacy agencies have noted that the start-up of granular activated carbon (GAC) treatment may release arsenic at levels that may exceed the arsenic MCL. Regardless if the released

arsenic exceeds the MCL, primacy agencies want to ensure that treatment for one contaminant does not pose exposure risks for other regulated contaminants. ASDWA recommends that EPA develop additional guidance on GAC start-up and conditions that may be utilized to ensure the safe start-up of GAC. Additionally, GAC is not optimal for the removal of every PFAS. EPA should continually release the most up-to-date guidance and research to primacy agencies that show what treatment media is most effective depending on what PFAS analytes are being addressed on an individual water system basis.

Primacy agencies have also highlighted concerns regarding the use of reverse osmosis (RO). While in some circumstances, RO may be the best option, this technology has many challenges that may not be able to be overcome and would make RO infeasible for some water systems. The cost to install and operate over time due to energy usage, waste disposal, and operator costs make the technology infeasible for many small water systems. RO is very difficult to operate and requires a highly trained and certified operator—primacy agencies have seen water systems with RO installed that fail to properly maintain the treatment, prematurely foul the membrane, or even enter enforcement due to operational concerns. Additionally, systems in states with limited water resources may experience water rights conflicts because of the amount of water used for brine disposal. Water systems in these states may also have limited disposal options for RO brine since there is limited dilution in the waterways. Primacy agencies have noted that these systems are left with limited options of deep well injection or evaporation ponds. One final concern regarding RO, as well as nanofiltration (NF), is the effect on the corrosion chemistry of the system. Some primacy agencies require a corrosion control treatment (CCT) evaluation before installing RO/NF/IX. ASDWA recommends that EPA provide additional clarification on these issues in the final rule.

ASDWA recommends that EPA develop guidance for water systems considering their options to address the PFAS MCL, both treatment and non-treatment. EPA should include some of the above considerations in that guidance material to ensure systems fully evaluate their options and understand the challenges associated with the various options. EPA should include considerations for regionalization/consolidation and utilize the opportunity to encourage systems that are currently not viable to connect to viable water systems. Primacy agencies have noted that there are also corrosion control concerns when consolidating systems and changing sources.

Additionally, ASDWA recommends that EPA develop updated, in-depth simultaneous compliance guidance for primacy agencies. Simultaneous compliance guidance will help to ensure that compliance with one contaminant is not being traded for another, similar to the past water quality problems in Washington, DC, in which elevated lead levels were caused due to a change in disinfectant to address disinfection by-product concerns. Drinking water chemistry is very complex, and primacy agencies want to ensure treatment protects consumers from all NPDWR contaminants.

Point of Use and Point of Entry Devices

ASDWA recommends that POU/POE devices not be considered a compliance option for the PFAS MCL until PFAS removal standards meet the MCL. Once standards align with the MCLs, ASDWA recommends limiting the compliance option for using POU/POE to very small systems serving 250 or fewer persons.

The final PFAS NPDWR should clearly outline that point-of-use (POU) and point-of-entry (POE) devices may not be a viable option for many systems. Additionally, the final rule should clearly state that the POU/POE option can only be pursued if the standards for the devices can reliably and consistently meet the MCL. Currently, POU/POE devices are not a viable or feasible option for compliance with the proposed PFAS MCLs. Current standards for POU/POE devices include NSF/ANSI 53: Drinking Water Treatment Units – Health Effects and NSF/ANSI 58: Reverse Osmosis Drinking Water Treatment Systems. The current standards for these treatment units allow a maximum effluent concentration of 20 ppt for total PFAS, 20 ppt for PFHpA, 20 ppt for PFHxS, 20 ppt for PFOA, 20 ppt for PFOS, and 6 ppt for PFNA. Additionally, current standards do not have reference concentrations for PFBS or GenX. While NSF has indicated it plans to incorporate additional PFAS and require treatment to levels designated by EPA's final MCL values, until such time that these standards are updated, POU/POE devices should not be considered a compliance option for the PFAS MCL.

Once removal standards align with the final MCL, many primacy agencies will still be hesitant to approve POU/POE devices as a compliance option. Recently published research found that resident cooperation, operation and maintenance, monitoring, and the actual implementation of distributed treatment approaches were repeatedly listed as the greatest compliance concerns[1].

While some primacy agencies allow and encourage the use of POU/POE devices as a compliance mechanism for small systems, others do not allow POU/POE in any circumstance. The same study mentioned above found that most primacy agencies and utilities described systems of approximately 30–50 connections as the most successful. Most survey respondents indicated restricting the use of POU/POE to water systems with less than 500 connections (this number is likely on the high side). ASDWA recommends that the compliance option for using POU/POE be limited to very small systems serving 250 or fewer connections.

The final rule should include language that while POU/POE devices are an option, these devices are not a viable option in many circumstances. While this option may seem like an economical alternative, several primacy agencies have reported that when implemented for other

[1] Alfredo, K., Wilson, M., and Roberson, A. Management of point-of-use and point-of-entry for regulatory compliance: Survey of state administrators. https://doi.org/10.1002/aws2.1334

contaminants, the POU/POE option becomes more expensive over time compared to other available alternatives. Factors such as device approval, ongoing operation and maintenance in perpetuity, monitoring, testing, and replacement drive these costs. Sampling to ensure the devices are working is a specific concern due to the cost of PFAS sampling and the access to homes for sampling locations. Primacy agencies have reported that maintaining compliance on POU systems can take significant staff resources. Primacy agencies have also raised concerns regarding biofilm growth should the devices be improperly maintained. Additionally, the POU/POE compliance option requires 100% participation from the community, which is difficult to maintain in perpetuity in most communities and would not be possible in systems serving more than 250 connections. The installation of POU devices often requires overtime work after hours to gain access to the customer's homes, and for the tracking of these devices and their monitoring results. Additionally, maintenance becomes increasingly difficult as more POU devices are installed.

Waste Disposal

ASDWA recommends that EPA prioritize research on waste disposal methods and move to address PFAS waste disposal utilizing a regulatory mechanism as soon as possible to ensure that PFAS contamination is not being moved from one media type to another. ASDWA recommends that EPA finalize the Agency's Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances ahead of the final rule.

The current information on other environmental impacts of PFAS disposal is limited, and all of the BAT listed for complying with the MCL have waste streams that will need to be appropriately addressed, including spent GAC media or ion exchange (IX) resin, RO brine water, and spent POU/POE devices. PFAS has not yet been designated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as a hazardous substance, but some primacy agencies have already reported water systems being unable to dispose of their PFAS-containing media as some waste disposal sites are refusing to accept the material.

PFAS is only included in a limited number of NPDES permits, so PFAS in the reject water from RO applications going to wastewater treatment facilities may not be removed, returning to source water locations. Research is limited on using underground injection control wells for RO reject water. Research is also limited on thermal regeneration of GAC and the release of PFAS into the atmosphere. ASDWA strongly recommends that EPA continue to pursue research on waste disposal options for PFAS to ensure long-term mitigation. As these waste disposal options are developed and regulated, EPA should ensure that water systems are able to reasonably comply with those options.

ASDWA recommends that EPA update and finalize the Agency's Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials

Containing Perfluoroalkyl and Polyfluoroalkyl Substances ahead of the final rule. Additionally, guidance about PFAS contaminated waste should be outlined in Resource and Conservation Recovery Act (RCRA) policies and procedures.

Resource Concerns

ASDWA recommends that EPA continue funding PFAS research on treatment and mitigation at water systems to help offset the cost increases affecting capital costs for these projects.

As a result of the COVID-19 pandemic and ongoing geopolitical conflicts, primacy agencies and water systems have already experienced ongoing effects on the global supply chain. Primacy agencies have reported that systems have had to delay the installation of treatment technologies due to supply shortages. Specifically, one primacy agency identified that the lead time needed for a granular activated carbon (GAC) treatment vessel was over 18 months for one installation of PFAS treatment. Additionally, primacy agencies have reported media and other equipment shortages. In conjunction with inflation, these shortages have caused project costs to increase across the board. These global supply chain and treatment shortage issues are significant feasibility concerns with rule implementation.

Primacy agencies and EPA will need to continue partnering on addressing water sector workforce challenges through increased resources for operator certification and workforce development programs to ensure treatment is operated by qualified and experienced personnel.

In most states, the advanced treatment needed for PFAS will, in most cases, require an increase in the level of certified operator needed to operate a public water system (PWS). The entire water sector is facing workforce shortages, especially for certified operators, and this issue is particularly prevalent in small, rural, and disadvantaged water systems. The challenges around hiring and retaining operators will continue to be exacerbated as systems install treatment to comply with the PFAS NPDWR. As the demand for operators increases, the cost to hire operators will also increase.

ASDWA recommends that EPA continue funding research for the treatment of emerging contaminants in drinking water, especially treatment at small water systems.

Based on costs associated with the BAT, primacy agencies anticipate that small and disadvantaged water systems exceeding the MCL will face financial difficulties implementing any treatment options. While funding under the Bipartisan Infrastructure Law (BIL) may be available for some systems, each of the BAT are costly treatment methods with high operation and maintenance costs. For many systems, these costs will be passed on to ratepayers.

Compliance

Timelines

ASDWA recommends that EPA allow flexibility in the compliance deadlines to ensure feasibility, similar to the flexibility offered as a part of the final arsenic regulation, allowing staggered compliance deadlines depending on the system size and/or initial PFAS concentrations.

While systems with a population greater than 3,300 are currently sampling for PFAS under UCMR 5, only a very small subset of small water systems are currently a part of that sampling pool. As such, most small water systems will have a late start with their PFAS sampling. While many large and medium-sized water systems will be taking advantage of the opportunity to use previously collected data from UCMR 5, many small systems will take their first PFAS samples after the final PFAS NPDWR is promulgated. If these small systems exceed the MCL, the three-plus-two-year compliance timeline will be challenging to meet—systems will need time for bench tests, approximately one year to pilot test, and approximately one year to design and obtain approval from the primacy agency. Additional time would be needed for bid preparation, obtaining financing, and for construction and start-up. ASDWA reiterates its recommendation that EPA consider the above factors to appropriately evaluate extended initial compliance deadlines for water systems, similar to the flexibility for the compliance deadlines in the final arsenic regulation.

ASDWA recommends that EPA update the proposal's economic analysis to better capture the burden on the state workforce with respect to the review and approval of PFAS treatment technologies.

Timelines for reviewing and approving treatment technologies have been underestimated in the proposal. In addition to reviewing and approving preliminary engineering reports (PER) and construction design plans for treatment technologies installed to maintain compliance with this rule, primacy agencies will also need to review and approve the pilot tests needed to ensure treatment efficacy of the selected BAT. Some primacy agencies may have limited experience with some of the BAT or may not have approved the technology for PFAS; as such, timelines for review and approval of these technologies are not as straightforward as what was presented in the proposal. EPA should continue research on small scale treatment technology and provide guidance for primacy agencies to alleviate this feasibility concern.

Small Systems

ASDWA recommends that EPA continue to fund and dedicate resources to technical assistance programs, programs to advance small water systems' technical, managerial, and financial capability, and operator recruitment programs.

Small system compliance with the PFAS NPDWR, regardless of the final value of the MCLs, will be challenging. Most small ground water systems currently have minimal treatment installed. For those systems with no alternative water source, installation of one of the BAT may present a variety of challenges if the current treatment only consists of a chemical feed and a pressure tank. In order to install one of the BAT options, a small ground water system may need to construct an entirely new building to house the treatment—this could account for up to 50% of the project's cost. This increase in building size may trigger additional building code requirements that further increase the cost of the project.

In most cases, the advanced treatment needed for PFAS will require an increase in the level of certified operator needed to operate a PWS. The entire water sector is facing workforce shortages, especially for certified operators, and this issue is particularly prevalent in small and disadvantaged water systems. The challenges around hiring and retaining operators will continue to be exacerbated as systems install treatment to comply with the PFAS MCL.

ASDWA recommends that EPA provide guidance on the BAT options offered that would be effective on a small enough scale to be used at these small water systems.

Numerous primacy agencies have indicated that they do not have experience with very small treatment units for PFAS treatment. However, primacy agencies have expressed the importance of ensuring treatment units are correctly sized for the water system.

Conclusion

Primacy agencies and water systems will face significant feasibility challenges implementing the proposed PFAS NPDWR. This rule will require significant additional resources from primacy agencies beyond the additional resources for SDWIS modernization, lead service line inventories, cybersecurity, and BIL funding. EPA must address the numerous feasibility concerns in these comments to ensure this public health measure is achievable and effective. However, ASDWA's members remain dedicated to partnering with EPA and their water systems to reduce PFAS levels and improve public health protection by complying with this rule. ASDWA recommends that EPA continue its engagement with primacy agencies as the Agency finalizes this rule. A coordinated effort will help ensure that public communication is effective and that primacy agencies are prepared to engage with their water systems and the public with the

promulgation of the final rule. ASDWA is prepared to help coordinate meetings between its members and EPA as needed to ensure the successful implementation of the final rule over the next decade.

APPENDIX A:
PFAS Cost of State Transactions Study (PCoSTS)

ASDWA developed a PFAS Cost of State Transactions Study (PCoSTS) as an independent analysis of the primacy agencies' burden for EPA's economic analysis developed for the proposed PFAS National Primary Drinking Water Regulation. The goal of this study was to provide a national annualized estimate of primacy agency staff time for PFAS rule implementation, with the exception of information on regulatory start-up activities for the first year. The individual agency workload will differ with each primacy agency, and the study serves as a national average of primacy agency workload.

ASDWA staff worked with its PFAS State Resources subgroup and PFAS Economic Analysis subgroup to divide the proposed rule into five tabs that categorize workload by the following activities:

- Regulatory Start-Up,
- Annual Reporting,
- Water System/Operator Technical, Managerial, and Financial Assistance and Training,
- Reviewing and Approving Treatment, and
- Compliance.

Within each tab are assumptions of activities that are included in the correlated tab estimations, specifically the hours each (Hours Ea.) columns.

Regulatory Start-Up

As previously stated, this is the only tab that estimates hours for the first year of implementation. The remaining tabs estimate the annual time for the transactions that primacy agencies will undertake under the current proposal. Within this tab, the estimates focus on the activities associated with the preparation of the proposed new rule. For example, these start-up actions include the development of training materials and the training of primacy agency staff, creating and modifying existing reports, lab accreditation, and hosting meetings for the general public.

Annual Reporting

This tab estimates the time associated with annual reporting. Some of the estimates within this tab include enforcement actions and reporting violations to EPA and responding to EPA's requests on system-specific issues.

Water System/Operator TMF Assistance and Training

The estimates in this tab are for the time primacy agencies will spend answering operator questions and assisting systems with funding applications.

Reviewing and Approving Treatment

This tab is broken down by system size based on an estimation of the percentage of systems needing additional treatment for compliance. This tab focuses on the workload associated with reviewing and approving treatment and includes items such as consulting utilities on source water changes, assisting with building infrastructure, and review of pilot projects.

Compliance

This tab focuses on the workload that includes assisting out-of-compliance systems and helping systems remain in compliance, as well as pursuing enforcement actions and reviewing system-specific variances and exemptions.

Costs of States Transactions Study for EPA's PFAS Proposal (PCoSTS)
Association of State Drinking Water Administrators (ASDWA)

The summary below is based on five categories taken from EPA's proposed PFAS rulemaking and state input from ASDWA workgroups. The first year of implementation includes the initial review and approval of all treatment and regulatory start-up activities. Cost is estimated on the state and local 2023 government employee average hourly rate of $57.60

First Year of Implementation

	Estimated Staff Hours	Estimated Cost
Regulatory Start-Up	210,700	$ 12,136,320
Annual Reporting	7,350	$ 423,360
Water System/Operator TMF Assistance and Training	73,500	$ 4,233,600
Reviewing and Approving Treatment (R&A Treatment	503,200	$ 28,984,344
Compliance	245,000	$ 14,112,000
Grand Total	**1,039,750**	**$ 59,889,624**

Annual Rule Requirements After First Year of Implementation

Annual Reporting	7,350	$ 423,360
Water System/Operator TMF Assistance and Training	73,500	$ 4,233,600
Compliance	245,000	$ 14,112,000
Grand Total	**325,850**	**$ 18,768,960**

The $57.60 hourly rate comes from the U.S. Bureau of Labor Statistics and includes both salaries/wages and benefits[2]. Combining the cost of the first year of implementation with four subsequent years of annual rule requirements (for a total of 2,343,150 staff hours), ASDWA's model estimates that the proposed NPDWR will increase primacy agency staff hours by roughly 469,000 hours annually in its first five years of implementation. This translates to an annual cost of almost $27 million.

[2] U.S. Bureau of Labor Statistics. (2023, March 27). Compensation costs for civilian workers averaged $42.48 per hour worked in December 2022. TED: The Economics Daily. Accessed May 22, 2023 from Compensation costs for civilian workers averaged $42.48 per hour worked in December 2022 : The Economics Daily: U.S. Bureau of Labor Statistics (bls.gov)

APPENDIX B:

Comments by ASDWA For the Proposed PFAS NPDWR

Appendix G

Exemptions & the Arsenic Rule

2. The time appropriately allocated for each of the activities identified in (1), and the total time allocated for all activities.

3. The cost of performing the activities identified in (1), and any savings that might be obtained from additional time.

4. The benefits that may be obtained from additional time, including any improvements in cost-effectiveness that may be obtained from non-BAT technologies or from ascertaining which technology may be most appropriate for the raw water supplies available to the system.

Other compelling factors affecting a system's ability to comply may be identified by the State on a case-by-case basis. EPA recognizes many systems may have difficulty in achieving compliance by January 23, 2006. There will be a wide variety of circumstances the States will have to consider, and there may be sufficient variation so that "compelling circumstances" cannot be strictly defined.

7. How can a PWS beginning operation after January 23, 2006 qualify for an exemption?

At a minimum, a PWS that begins operation after January 23, 2006 must show that it has "no reasonable alternative source of drinking water" in order to qualify for an exemption (40 CFR 142.20(b) and SDWA §1416(a)(2)). Such a system should show that it is not feasible to develop an alternative source of water which has a lower level of arsenic or to access a neighboring system's water source. A system that successfully demonstrates it has no reasonable alternative source of drinking water may be eligible for an exemption. To be eligible, new systems still must meet all other exemption eligibility criteria that apply, including:

1. The presence of a compelling factor which prohibits the system from complying by January 23, 2006.

2. The absence of unreasonable risk to health.

3. The lack of available management or restructuring changes that would result in compliance or, if compliance cannot be achieved, would improve water quality.

8. What constitutes an "Unreasonable Risk to Health"?

An exemption from the revised arsenic MCL requires, among other things, that the exemption will not result in an unreasonable risk to health. An exemption to an MCL allows a PWS to continue to provide water at some level above the MCL for a specified period of time, after which the system must come into compliance.

In this guidance, EPA is suggesting an approach to determine what does **not** constitute an unreasonable risk to health with respect to arsenic. This approach bases the length of an exemption on the level of arsenic in the water. States may use an alternate method to the following approach.

EPA's approach is based on the fact that Congress included exemption provisions in the SDWA with the clear intention that they be used to address the needs of economically challenged systems by providing additional time to achieve compliance. Congress necessarily contemplated that the customers of these systems would be exposed to drinking water above the MCL for the period of the exemption. The

limitation that Congress imposed on this excess exposure is that it not constitute an unreasonable risk to health. EPA is suggesting one possible approach to determining what does not pose an unreasonable risk to health with respect to arsenic, rather than addressing the much more complex issue of what **does** constitute an unreasonable risk to health.

In reauthorizing the SDWA, Congress established a time frame for implementation that allows systems up to 5 years to comply with new or revised regulatory requirements. Under the revised MCL of 10 ppb, water systems are allowed to continue to operate at levels between 10 ppb and 50 ppb for up to 5 years. Through the time frame allowed in SDWA, Congress made the tacit determination that these exposures will pose an acceptable, and therefore not "unreasonable" risk of adverse health effects to the affected population. Based on that determination and on information suggesting a linear relationship between the arsenic dose and cancer risk, EPA is suggesting concentration levels that should not generally pose an unreasonable risk to health for exemptions of various durations.

The previous arsenic MCL was 50 ppb. Systems must begin complying with the revised MCL of 10 ppb by January 23, 2006, five years from the date the Arsenic Rule was published (January 22, 2001). Thus, in principle, a system could be providing water with an arsenic level of 50 ppb until January 23, 2006 and be in full compliance with the SDWA and EPA regulations. The system would remain in compliance if it reduced its arsenic level to 10 ppb or less by January 23, 2006.

Exemptions could extend the compliance date by up to 3 years or up to 9 years, depending on system size and number of extensions granted. The longest period a system could have to achieve compliance would be 14 years (the 5-year base of January 22, 2001-January 23, 2006, plus a 3-year exemption and three 2-year extensions).

As a matter of congressional policy, exposure at 50 ppb for the 5 years from January 22, 2001 to January 23, 2006 should **not** pose an unreasonable risk to health. This represents 40 ppb above the revised MCL of 10 ppb (50 ppb-10 ppb = 40 ppb). The total exposure above the revised MCL for those 5 years is 40 ppb×5 years = 200 ppb×years. This 200 ppb×years may be thought of as the "excess compliance-period exposure." That is, it represents the exposure above what would have occurred if water systems had instantaneously complied with the revised MCL on January 22, 2001. It represents "excess exposure" that, as a matter of law and policy, should not pose an unreasonable risk to health.

EPA's policy is to assume a linear relationship between adverse health effects of a chemical and exposure unless there are sufficient data to decide otherwise. In its review of the Arsenic Rule extending into fall 2001, the scientific community again endorsed EPA's decision to use a linear approach for estimating arsenic risks. Exemptions and any subsequent extensions cannot be granted for more than 9 years and for concentrations higher than 50 ppb. Thus, for an exemption, the determination of what concentration level and duration does not pose an unreasonable risk to health can be conservatively determined by limiting "excess compliance-period exposure" to #200ppb×years for the total compliance period including the full duration of an exemption. The following calculations clarify the application of this concept:

(5 years)×(40 ppb) = 200 ppb×years

(8 years)×(C_8) = 200 ppb×years; (C_8) = (200ppb×years)/(8 years) = 25 ppb

Thus, for an initial 3-year exemption (which provides a total compliance period of 8 years), a concentration of 25 ppb above the MCL of 10 ppb (a total concentration of 35 ppb) would not generally pose an unreasonable risk to health.

(10 years)×(C_{10}) = 200 ppb×years; (C_{10}) = (200 ppb×years)/(10 years) = 20 ppb

Thus, for a 2-year extension to the initial 3-year exemption (which provides a total compliance period of 10 years), a concentration of 20 ppb above the MCL of 10 ppb (a total concentration of 30 ppb) would not generally pose an unreasonable risk to health.

(12 years)×(C_{12}) = 200 ppb×years; (C_{12}) = (200 ppb×years)/(12 years) = 17 ppb

Thus, for two 2-year extensions to the initial 3-year exemption (which provides a total compliance period of 12 years), a concentration of 17 ppb above the MCL of 10 ppb (or a total concentration of 27 ppb) would not generally pose an unreasonable risk to health.

(14 years)×(C_{14}) = 200 ppb×years; (C_{14}) = (200 ppb×years)/(14 years) = 14 ppb

Thus, for three 2-year extensions to the initial 3-year exemption (which provides a total compliance period of 14 years), a concentration of 14 ppb above the MCL of 10 ppb (or a total concentration of 24 ppb) would not generally pose an unreasonable risk to health.

Based on these calculations, EPA believes the values in Table 1 offer a conservative and appropriate framework for determining the duration of an exemption that should not generally pose an unreasonable risk to health for systems with various historical arsenic concentrations. As a result, States may wish to consider exemptions for the indicated arsenic concentrations over the indicated time periods.

Table 1: Exemption Eligibility Based on "Unreasonable Risk to Health" Criteria

Systems Serving	Total Compliance Time after 01/22/2001	Exemption Periods Available	Would an exemption be granted for these arsenic concentrations?				
			> 35 ppb	> 30 ppb but < 35 ppb	> 25 ppb but < 30 ppb	>20 ppb but < 25 ppb	≤ 20 ppb
> 3,300 persons	8 years	3 years (2006-2009)	No	Yes	Yes	Yes	Yes
≤ 3,300 persons	8 years	3 years (2006-2009)	No	Yes	Yes	Yes	Yes
	10 years	5 years (2006-2011)[a]	No	No	Yes	Yes	Yes
	12 years	7 years (2006-2013)[b]	No	No	No	Yes	Yes
	14 years	9 years (2006-2015)[c]	No	No	No	No	Yes

[a]Includes the initial 3-year exemption available to all systems and the first of three 2-year small system extensions.
[b]Includes the initial 3-year exemption available to all systems and two of three 2-year small system extensions.
[c]Includes the initial 3-year exemption available to all systems and all three 2-year small system extensions.

Note that, in determining the arsenic concentrations allowable in small systems that receive the second and third extensions available to them, EPA suggests that States round down the allowable concentrations relative to the values shown in the calculations discussed above. This rounding down provides an additional margin of safety, given the relatively long durations of elevated exposures that would be experienced by the individuals served by these systems.

This analysis is predicated on the assumption that a system will seek an exemption based on the historical concentration of arsenic in its source water. In other words, under this approach exemptions would not be available for systems that historically have had arsenic concentrations above 35 ppb, even if those

systems have recently taken steps to reduce their concentrations to 35 ppb or less. Furthermore, under this approach, exemptions would not offer a stair-step path to compliance. Systems could not obtain a 3-year exemption with a concentration of 35 ppb, and then seek an extension to that exemption by blending or otherwise reducing their concentrations to 30 ppb. Under this approach, the total length of the exemption for which a system is eligible is determined by the historical concentration of arsenic in the system's source water at the time of application for an exemption.

9. What must the State consider to conclude that management or restructuring changes cannot reasonably be made to achieve compliance or improve the drinking water quality by January 23, 2006?

The regulation (40 CFR 142.20(b)(1)) defines the measures a State must consider before determining that management or restructuring changes cannot reasonably be made by a system to achieve compliance or, if compliance cannot be achieved, improve the quality of its drinking water. This task need not be onerous or time consuming. Rather, the State can use information from existing files, site visits, and telephone conversations with system managers to make determinations, and can quickly and briefly document such determinations. The State determination form in Section 2 is an example of such streamlined documentation. In making the determination, the State must consider what a system could reasonably accomplish through all of the following (40 CFR 142.20(b)(1)(i)):

1. Rate increases.

2. Accounting changes.

3. Appointment of a State-certified operator (under the State's Operator Certification program).

4. Joint operation with one or more PWSs (through a contractual agreement).

5. Activities consistent with the State's Capacity Development Strategy (to help the PWS acquire and maintain technical, financial, and managerial capacity).

6. Ownership changes.

7. "Consolidation (physical or otherwise) with another PWS."

In addition, the State must consider whether the DWSRF or other forms of federal or State assistance are "reasonably likely to be available within the period of the exemption" to implement the appropriate measures (40 CFR 142.20(b)(1)(i)). If none of these measures is feasible by January 23, 2006, the system may be eligible for an exemption if the other three criteria listed above in the answer to Question 2 are met. A State must document its findings when determining that appropriate management or restructuring changes cannot reasonably be made by January 23, 2006 (40 CFR 142.20(b)(1)). Such documentation may conveniently be prepared using a form such as that suggested in Section 2.